

Claims

What is claimed is:

- 5 1. In apparatus for providing a portable spoken language interface for a user to a device in communication with the apparatus, the device having at least one application associated therewith, the spoken language interface apparatus comprising: (A) an audio input system for receiving speech data provided by the user; (B) an audio output system for outputting speech data to the user; (C) a speech decoding engine for generating a decoded output in response to spoken utterances; (D) a speech synthesizing engine for generating a synthesized speech output in response to text data; (E) a dialog manager operatively coupled to the device, the audio input system, the audio output system, the speech decoding engine and the speech synthesizing engine; and (F) at least one user interface data set operatively coupled to the dialog manager, the user interface data set representing spoken language interface elements and data recognizable by the application of the device; wherein: (i) the dialog manager enables connection between the input audio system and the speech decoding engine such that the spoken utterance provided by the user is provided from the input audio system to the speech decoding engine; (ii) the speech decoding engine decodes the spoken utterance to generate a decoded output which is returned to the dialog manager; (iii) the dialog manager uses the decoded output to search the user interface data set for a corresponding spoken language interface element and data which is returned to the dialog manager when found; (iv) the dialog manager provides the spoken language interface element associated data to the application of the device for processing in accordance therewith; (v) the application of the device, on processing that element, provides a reference to an interface element to be spoken; (vi) the dialog manager enables connection between the audio output system and the speech synthesizing engine such that the speech synthesizing engine which, accepting data from that element, generates a synthesized output that expresses that element; and (vii) the audio output system audibly presenting the synthesized output to the user; a method for modifying a data structure containing the at least one user interface data, comprising:
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adding a new application to the device;
generating a second user interface data set in accordance with the new application;
transferring the second user interface data set from the device to the apparatus;
and
5 loading the second user interface data set into the data structure of the apparatus.

2. The method of claim 1, further comprising the step of audibly notifying the user that the new application is useable via the audio output system.

3. The method of claim 1, further comprising the step of removing a user interface data set from the data structure.

10 4. The method of claim 3, wherein the user interface data set is removed prior to the loading step in accordance with a least recently used algorithm.

5. The method of claim 3, wherein the user interface data set is removed in accordance with a request by an application.

15 ~~6.~~ A method of automatically providing a spoken language interface for a user with respect to at least one external network with which the user interacts, wherein the user possesses a portable spoken language interface device having a data structure for storing one or more user interface data sets used to provide one or more spoken language interfaces, the method comprising the steps of:

20 the device requesting a spoken language interface data set from the external network upon discovery of the external network;

the external network transferring the spoken language interface data set to the device; and

loading the spoken language interface data set into the data structure of the device for use by the user interfacing with the external network.

7. The method of claim 6, wherein the device is in wireless communications with the external network.

5 8. The method of claim 6, wherein the device comprises a personal digital assistant.

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